

PATENT CLAIMS

1. A method for controlling the thermal flows in at least one building, according to which means for  
5 controlling the temperature within the building are controlled on the basis of a plurality of input parameters, characterized in that the means for controlling the temperature of a specific space, or at least of an area of a specific space, under  
10 consideration are actuated by using, as input parameters,

a) at least one target value, in particular the desired temperature of the specific space;

15 b) at least one general parameter which is characteristic of at least one variable inside and/or outside the building, which parameter at least indirectly controls the temperature within the specific  
20 space, and

c) at least one specific parameter which is characteristic of the specific thermal flow conditions of the specific space, or of the area of the specific  
25 space, under consideration;

and the control of the means is calculated from these input parameters in a control unit.

30 2. The method as claimed in claim 1, characterized in that the means for controlling the temperature are at least one heater and/or at least one air conditioning system and/or at least one ventilation system and/or at least one device for controlling the solar radiation  
35 into the space.

3. The method as claimed in one of the preceding claims, characterized in that the control unit has access to a database in which historical values of the

parameters (b, c) and the target values (a) of the specific space under consideration and/or the specific building under consideration are contained, and in that the control of the means for controlling the temperature is carried out on the basis of the input parameters taking into account these historic values, wherein the control of the means for controlling the temperature on the basis of the input parameters in an adaptation process while taking into account these historic values is particularly preferred.

4. The method as claimed in one of the preceding claims, characterized in that the at least one general parameter (b) is a parameter, or a selection from the following parameters, measured in particular by means of sensors:

- temperature on the outside of the building under consideration;
- humidity on the outside of the building under consideration;
- the wind on the outside of the building under consideration;
- the solar radiation on the outside of the building under consideration;

wherein these general parameters (b) are particularly preferably measured at a plurality of locations with different climatic controls such as, for example, at different facades and/or on the roof of the building, possibly at different heights.

5. The method as claimed in claim 4, characterized in that information about the weather forecast, in particular of the region, is additionally used as a general parameter (b), and/or in that the sunrise and

sunset are additionally calculated from the data item and are used for the control process.

6. The method as claimed in one of claims 4 or 5, characterized in that the general parameters (b) are transferred periodically or continuously to the control unit at least partially via a cabled or cableless network, in particular preferably via a LAN, wireless LAN, GPRS or the like, using standard protocols such as SMTP, ftp, http.

7. The method as claimed in one of the preceding claims, characterized in that general parameters (b) according to one of claims 4 to 6, which are measured at at least one other building, are further used as input parameters, wherein these other buildings are particularly preferably arranged adjacently or at a distance which is relevant for the climate, in particular the microclimate, of the building under consideration, wherein such general parameters (b) of other buildings or devices are particularly preferably taken into account as a function of the weather forecast and/or the wind direction and/or the wind speed.

8. The method as claimed in claim 7, characterized in that these input parameters from other buildings are transmitted, or made available, to the control unit of the building under consideration via the www, a WAN, a LAN or similar networks, and wherein the building under consideration itself makes its data available to the other buildings in the same way.

9. The method as claimed in claim 7 or 8, characterized in that a plurality of buildings make available their general parameters (b) to a database and in each case the control units of other buildings can access the totality of this data.

10. The method as claimed in one of the preceding claims, characterized in that in addition the value of the temperature in the specific space under consideration and/or the value of the temperature in adjacent specific spaces under consideration are used as input parameters.

11. The method as claimed in one of the preceding claims, characterized in that the at least one specific parameter (c) is one of, or a selection from, the following parameters:

- window face;
- 15 - insulation state;
- orientation of the space under consideration with respect to the cardinal direction and solar radiation;
- 20 - shadowing by adjacent buildings and/or vegetation - if appropriate season-specifically - or topography;
- 25 - height of building above sea level;
- coordinates of the building;

wherein these specific parameters (c) are either determined once and input into the control unit and/or wherein the entire control of at least some of the specific parameters (c) is determined automatically by the control unit in a possibly continuous adaptation process taking into account the control of the general parameters (b) and the executed actuation of the means for temperature control on the value which is actually brought about in the specific space, as claimed in claim 10.

12. A device for controlling the thermal flows in at least one building using a method as claimed in one of claims 1 to 11, comprising at least one control unit with which means for controlling the temperature within the building under consideration are controlled, a plurality of sensors for determining the parameters (b, c), the possibility of accessing a weather forecast, and a communications network, in particular in the form of a LAN, WAN, www, via which the parameters (b, c) are transferred from the sensors to the control unit or via which the weather forecast is transferred to the control unit.

13. A control unit for carrying out a method as claimed in one of claims 1 to 11 or for use in a device as claimed in claim 12, comprising at least one processor, internal means for storing data and at least one network interface, wherein a database on which the data of the input parameters and the actually achieved target values are continuously recorded is provided in the data storage means, and wherein the control unit is configured in such a way that means for temperature control are actuated on the basis of the instantaneous input parameters taking into account the history contents of the database in an optimizing and learning fashion.

14. A data processing program for carrying out a method as claimed in one of claims 1 to 11 in a control unit according to claim 13.